



IPW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert W. Allington, et al.) Patent Application
Serial No: 10/607,080)
Filed : June 25, 2003) Examiner: E. Therkorn
For : SEPARATION SYSTEM,) Group Art Unit: 1723
COMPONENTS OF A SEPARATION)
SYSTEM AND METHODS OF MAKING) Date: April 26, 2005
AND USING THEM)

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office action mailed February 10, 2005, in the above-identified case, and as requested, enclosed please find a copy of the form PTO-1149 as submitted February 11, 2004, and the foreign and literature references cited on the PTO-1149 dated February 11, 2004.

Respectfully submitted,

Vincent L. Carney
Vincent L. Carney
Attorney for the Applicant
Reg. No. 20,688
P.O. Box 80836
Lincoln, NE 68501-0836
(402) 465-8808

-Our Ref: 18-529-8-1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert W. Allington, et al.) Patent Application
Serial No: 10/607,080)
Filed : June 25, 2003) Group Art Unit: 1723
For : SEPARATION SYSTEM,) Examiner: Ernest G. Therkorn
COMPONENTS OF A SEPARATION)
SYSTEM AND METHODS OF)
MAKING AND USING THEM)

CERTIFICATE OF MAILING

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I hereby certify that this letter, form PTO-1149 and foreign and literature references #57 - #134 are being deposited with the United States Postal Service as first-class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 26, 2005.

Vincent L. Carney
Vincent L. Carney
Attorney for the Applicant
Reg. No. 20,688
P.O. Box 80836
Lincoln, NE 68501-0836
(402) 465-8808

**COPY**Sheet 1 of 10
10/607,080

18-529-8-1

Form PTO-1449

ATTY. DOCKET NO.

SERIAL NO.

INFORMATION DISCLOSURE CITATION

Robert W. Allington, et al.

APPLICANT

June 25, 2003

1723

FILING DATE**GROUP****U.S. PATENT DOCUMENTS**

DOCUMENT NO.	PATENT NO	PATENTEE	ISSUE DATE
1.	4,087,391	Quentin, Jean	5-2-78
2.	4,430,216	Yoichiro Ito	2-7-84
3.	5,453,185	Frechet & Svec	9-26-95
4.	5,728,457	Frechet & Svec	3-17-98
5.	5,334,310	Frechet & Svec	8-2-94
6.	5,767,387	Wang	6-16-98
7.	Re. 31,974	Brownlee	8-27-85
8.	5,439,593	Price	8-8-95
9.	6,248,798 B1	Slingsby, et al	6-19-01
10.	4,283,280	Brownlee	8-11-81
11.	4,313,828	Brownlee	2-2-82
12.	4,464,240	Hansen	8-7-84

Form PTO-1449	ATTY. DOCKET NO.	SERIAL NO.
13.	4,465,571	Hansen
14.	3,246,767	Pall et al.
15.	3,353,682	Pall et al.
16.	3,598,728	Bixler et al.
17.	3,696,061	Selsor et al.
18.	3,796,657	Pretorius et al.
19.	3,808,125	Good
20.	3,878,092	Fuller
21.	3,954,608	Valentin
22.	4,031,037	Kalal et al.
23.	4,102,746	Goldberg
24.	4,169,014	Goldberg
25.	4,340,483	Lukas et al.
26.	4,447,328	Kamiyama et al.
27.	4,486,311	Nakajima et al.
28.	4,497,710	Wagu et al.
29.	4,565,832	Kobashi et al.
30.	4,747,956	Kiniwa
31.	4,794,177	Peska et al.
32.	4,889,632	Svec et al.
33.	4,913,812	Moriguchi et al.

Form PTO-1449	ATTY. DOCKET NO.	SERIAL NO.
34.	4,923,610	Svec et al. 5-8-90
35.	4,952,349	Svec et al. 8-28-90
36.	5,019,270	Afeyan et al. 5-28-91
37.	5,130,343	Frechet et al. 7-14-92
38.	5,135,650	Hjerten et al 8-4-92
39.	5,183,885	Bergot 2-2-93
40.	5,228,989	Afeyan et al. 7-20-93
41.	5,306,426	Afeyan 4-26-94
42.	5,306,561	Frechet et al. 4-26-94
43.	5,384,042	Afeyan et al. 1-24-95
44.	5,389,449	Afeyan et al. 2-14-95
45.	5,503,933	Afeyan et al. 4-2-96
46.	5,552,041	Afeyan et al. 9-3-96
47.	5,605,623	Afeyan et al. 2-25-97
48.	5,645,717	Hjerten et al. 7-8-97
49.	5,647,979	Liao et al. 7-15-97
50.	5,814,223	Hjerten et al. 9-29-98
51.	5,833,861	Afeyan et al. 11-10-98
52.	5,916,445	Hjerten et al. 6-29-99
53.	5,935,429	Liao et al. 8-10-99
54.	6,238,565 B1	Hatch 5-29-01

Form PTO-1449

ATTY. DOCKET NO.

SERIAL NO.

55. 6,318,157 Corso et al. 11-20-01

56. App 60/178,553 Huber, C.

FOREIGN PATENT DOCUMENTS

DOCUMENT NO.	PUBLISHED PATENT			COUNTRY OR PATENT OFF.	TRANSLATION	
	PATENT NO	APPLICATION NO.	DATE		YES	NO
57	WO 95/22555	PCT/US95/01966	24.08.95	PCT	X	
58	JP 63-84641	61-228074	4-15-88	JP		X
59	0 129 295B2	84200856.7	09.11.88	EPO	X	
60	WO 89/07618	154,815	24.08.89	PCT	X	
61	0 399 318A1		12.05.90	EPO		X
62	WO 99/15024	PCT/US97/16993	01.04.99	PCT	X	
63	WO 01/93974A1	PCT/US01/18650	13.12.2001	PCT	X	
64	EP 0101982	EP19830107709	1984-03-07	EPO	X	
65	WO 01/57263A1	PCT/US01/03706	02.02.2001	PCT	X	
66	WO 00/52455	PCT/US00/05123	29.02.00	PCT	X	
67	WO 00/15321	PCT/US99/20066	01.09.99	PCT	X	
68	0 180 321A2	85306830.2	07.05.86	EPO	X	
69	DE 35 43 348 A1		11.6.87	German		X
70	DE 39 00272 A1		12.7.90	German		X
71	DE 43 34351 A1		13.4.95	German		X
72	0 264 984 A1	87201768.6	27.04.88	EPO	X	

18-529-8-1

10/607,080

Form PTO-1449		ATTY. DOCKET NO.		SERIAL NO.	
73	0 282 177A2	88301278.3	14.09.88	EPO	X
74	DE 43 33821A1		6.04.95	German	X
75	0 534 567 A2	92202942.6	31.03.93	EPO	X
76	WO 99/44053	PCT/EP99/01391	02.09.99	PCT	X
77	1,188,736		22.04.70	Britain	X
78	211743		15.01.83	Czech	X
79	6,803,739 (English Translation)		10.03.91	Netherlands	X
80	0 231 684 A186402709.9		12.08.87	EPO	X
81	0 320 023 A288120747.6		14.06.89	EPO	X
82	0 407 560 B190902731.0		21.06.95	EPO	X
83	0 813 062 A297105607.2		17.12.97	EPO	X
84	0 852 334 A197310361.7		08.07.98	EPO	X
85	WO 90/07965	PCT/US90/00191	26.07.90	PCT	X
86	WO 01/93974 A1	PCT/US01/18650	13.12.2001	PCT	X
87	WO 00/15778	PCT/US99/20596	23.03.00	PCT	X

OTHER DOCUMENTS (Including Author, Title, Date Pertinent Pages, Etc.)**EXAMINER
INITIALS**

88 "Monolithic Matrix Accelerates Separation", HIGH TECH SEPARATIONS NEWS, July 2001, Volume 14, No. 2

18-529-8-1

10/607,080

Form PTO-1449

ATTY. DOCKET NO.

SERIAL NO.

- 89 "Rapid reversed-phase separation of proteins and peptides using optimized 'moulded' monolithic poly(styrene-co-divinylbenzene) columns", JOURNAL OF CHROMATOGRAPHY A, 865 (1999) pg 169-174
- 90 Poster Presentation "Macroporous Poly(Styrene-co-Divinyl-benzene) Monoliths for High Throughput Reversed-Phase Separation of Biomolecules", 217th ACS National Meeting in Anaheim, March 21, 1999 by Shaofeng Xie
- 91 Poster Presentation "Monolithic Macroporous Poly(Styrene-co-Divinylbenzene) Columns for Rapid or High Throughput Reversed-Phase Separation of Proteins and Peptides", PREP'99- 1999 International Symposium, San Francisco, May 26, 1999, by Shaofeng Xie
- 92 Poster No. 1659P Presentation "High-Speed Bioseparation with Monolithic Columns", Poster No. 1659P, Bioanalytical Separation Session, PITTCON2001, New Orleans, March 5, 2001, by Shaofeng Xie
- 93 Poster Presentation "Applications of Polymeric Monolith Columns for Fast Bioseparations", Presented at ISPPP2000, Ljubljana, Slovenia, by Shaofeng Xie, et al
- 94 Poster Presentation "High Throughput Bioseparations in Monolithic Ion Exchangers", presented at HPLC2000, Seattle, WA by Shaofeng Xie, et al.
- 95 2106P Poster Presentation "Rapid Bio-separations in Columns with Monolithic Separation Media", at Pittcon 2000, New Orleans, LA, by S. Xie, et al.
- 96 "Carbonate Mysteries", Henry Elderfield; *Science*, Vol. 296, May 31, 2002, 1618 - 1621
- 97 L.R. Snyder, J.J. Kirkland, *Introduction to Modern Liquid Chromatography, Second Edition*, John Wiley & Sons, Inc., (1979) 183-195, 203-204, 492-494
- 98 "High-performance liquid chromatography on continuous polymer beds", S. Hjerten, J-L Liao, and R. Zhang, *J. Chromatogr*, 473 (1989) 273-275

Form PTO-1449

ATTY. DOCKET NO.

SERIAL NO.

- 99 "Reactive polymers: 61. Reaction of macroporous poly(glycidyl methacrylate-co-ethylene dimethacrylate) with phenol", D. Horak, J. Straka, J. Stokr, B. Schneider, T.B. Tennikova and F. Svec, *Polymer*, 32, no. 6 (1991) 1135-1139
- 100 "REACTIVE POLYMERS, XXV. Morphology of Polymeric Sorbents Based on Glycidyl Methacrylate Copolymers", Z. Pelzbauer, J. Lukas, F. Svec and J. Kalal, *J. Chromatogr*, 171 (1979) 101-107
- 101 "Chiral electrochromatography with a 'moulded' rigid monolithic capillary column", E.C. Peters, K. Lewandowski, M. Petro, F. Svec and J.M.J. Frechet, *Analy. Commun.*, 35 (1998) 83-86
- 102 "High-Performance Membrane Chromatography. A Novel Method of Protein Separation", T.B. Tennikova, B.G. Belenkii, and F. Svec, *J. of Liquid Chromatogr.*, 13(1) (1990) 63-70
- 103 "Continuous beds for standard and micro high-performance liquid chromatography", Jia-Li Liao, Rong Zhang and Stellan Hjerten, *J. of Chromatography*, 586 (1991) 21-26
- 104 "Continuous Beds for Microchromatography: Reversed-Phase Chromatography", Jia-Li Liao, Yi-Ming Li, and Stellan Hjerten, *Analytical Biochemistry*, 234 (1996) 27-30, #1
- 105 "Continuous Beds for Microchromatography: Detection of Proteins by a Blotting Membrane Technique", Jia-Li Liao, Cheng-Ming Zeng, Anders Palm and Stellan Hjerten, *Analytical Biochemistry*, 241 (1996) 195-198
- 106 "High-Performance Liquid Chromatography of Proteins on Compressed, Non-Porous Agarose Beads", Stellan Hjerten and Jia-Li Liao, *J. of Chromatography*, 457 (1988) 165-174
- 107 "The Design of Agarose Beds for High-Performance Hydrophobic-Interaction Chromatography and Ion-Exchange Chromatography Which Show Increasing Resolution with Increasing Flow Rate", Stellan Hjerten, Yao Kunquan and Jia-Li Liao, *Makromol. Chrm., Macromol. Symp.* 17 (1988) 349-357
- 108 J. Reusch, D. Josic, *Konigsteiner Chromatographietage* (1991) page 158

Form PTO-1449

ATTY. DOCKET NO.

SERIAL NO.

-
- 109 "Perfusion chromatography packing materials for proteins and peptides", N.B. Afeyan and S.P. Fulton, *J. of Chromatography*, 544 (1991) 267-279
- 110 "Flow-through particles for the high-performance liquid chromatographic separation of biomolecules: perfusion chromatography", N.B. Afeyan, N.F. Gordon, I. Mazsaroff, L. Varady and S.P. Fulton, *J. Chromatography*, 519 (1990) 1-29
- 111 "In Situ Preparation and Evaluation of Open Pore Polyurethane Chromatographic Columns", F.D. Hileman and R.E. Sievers, *Analytical Chemistry*, V. 45 no. 7 (1973) 1126-1130
- 112 "High Resolution-Low Pressure Liquid Chromatography", T.R. Lynn, D.R. Rushneck, A.R. Cooper, *J. Chromatographic Science*, 12 (1974) 76-79
- 113 "Surface Modified Open-Pore Polyurethane Packings for Liquid Chromatography", D.P. Herman and L.R. Field, *J. Chromatographic Science*, 20 (1982) 55-61
- 114 "Polyurethane Foams and Microspheres in Analytical Chemistry", T. Braun and A.B. Farag, *Analytica Chimica Acta*, 99 (1978) 1-36
- 115 "Coiled High-Efficiency Liquid Chromatography Columns", A.R. Cooper and T.R. Lynn, *Separation Science*, 11(1) (1976) 39-44
- 116 "Ion Chromatography on Methacrylate Ion Exchangers", J.Hradil and F. Svec, *J. of Chromatography*, 475 (1989) 209-217
- 117 "Open-Pore Polyurethane Columns for Collection and Preconcentration of Polynuclear Aromatic Hydrocarbons from Water", James D. Navratil, Robert E. Sievers and Harold Walton, *Analytical Chemistry*, 49(14) (1971) 2260-2263
- 118 "Chemical separations with open-pore polyurethane", James D. Navratil and Robert E. Sievers, *American Lab.* 9(10) (1977) 38-42
- 119 "Open Pore Polyurethane - A New Separation Medium", William D. Ross, *Separation and Purification Methods* 3(1) (1974) 111-131
-

Form PTO-1449

ATTY. DOCKET NO.

SERIAL NO.

- 120 "In Situ -- Formed Open-Pore Polyurethane as Chromatography Supports", William D. Ross and Robert T. Jefferson, *J. of Chromatographic Science*, 8 (1970) 386-389
- 121 "In Situ Open-Pore Polyurethane as Chromatography Supports", William D. Ross and Robert T. Jefferson, *Advan. Chromatogr. Proc. Int'l Symp.* 6th, (1970)
- 122 "39. Preparation and Properties of Open Pore Polyurethane", I.O. Salyer, R.T. Jefferson, J.V. Pustinger and J.L. Schwendeman, *163rd National ACS Meeting, Boston, MA* (April, 1972)
- 123 "Preparation and Properties of Open Pore Polyurethane (OPP)", Ival O. Salyer, R.T. Jefferson, John V. Pustinger and James L. Schwendeman, *J. of Cellular Plastics*, 9 (1973) 25-34
- 124 "Applications of Porous Urea/Formaldehyde Polymers", A.M. Usmani, *J. Macromol. Sci.-Chem.*, A19(8&9) (1983) 1237-1246
- 125 Brochure: "Quick Disk", Saulentechnik/Knauer
- 126 Advertisement: "ConSep™", Millipore Corp., Genetic Engineering News, Sept. 15, 1993
- 127 Brochure: "ConSep™ LC 100 System", Millipore Corp.
- 128 Brochure: "MemSep® Chromatography Cartridges", Millipore Corp.
- 129 "High-Performance Liquid Chromatography-Electrospray Ionization Mass Spectrometry of Single- and Double-Stranded Nucleic Acids Using Monolithic Capillary Columns", Premstaller, Oberacher, Huber, *ANALYTICAL CHEMISTRY*, Vol. 72, No. 18, 4386-4393
- 130 "Urea-formaldehyde resin monolith as a new packing material for affinity chromatography", Xuefei Sun, Zhikuan Chai; *JOURNAL OF CHROMATOGRAPHY A*, 943 (2002) 209-218
- 131 "From Microspheres to monoliths: Synthesis of porous supports with tailored properties by radiation polymerization", Grasselli, Smolko, Hargittai, Safrany, *NUCLEAR INSTRUMENTS AND METHODS IN PHYSICS RESEARCH B* 185 (2001) 254-261

Form PTO-1449

ATTY. DOCKET NO.

SERIAL NO.

132 "Polymer Reprints", C.H. Do, G.B. Butler, AMERICAN CHEMICAL SOCIETY, DIVISION OF POLYMER CHEMISTRY, Vol. 29 (1988), 513-514

133 "Functional Polymeric Microspheres Synthesized by Radiation Polymerization", A. Safranj, S. Kano, M. Yoshida, H. Omichi, R. Katakai, M. Suzuki; *Radiat. Phys. Chem.*, Volume 46, No. 2 (1995) 203-206

134 "Viscometric and Light Scattering Studies on Microgel Formation by γ -Ray Irradiation to Aqueous Oxygen-free Solutions of Poly(vinyl alcohol)", B. Wang, S. Mukataka, M. Kodama, E. Kokufuta; *Langmuir*, Volume 13 (1997) 6108-6114

EXAMINER

DATE CONSIDERED